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NEW SPECIES AND NOTES ON STRUCTURE OF MOTHS AND GENERA.

BY A. R. GROTE, A. M.

(Continued from Page 87.)

SYNEDOIDA MUCRONATA, n. s.

Eyes naked, lashed. Labial palpi with long cylindrical narrow third joint; second joint heavily scaled. Abdomen untufted. Of an inconspicuous fuscous or brownish gray, sprinkled with pale points, markings all concolorous with the wing. The t. p. line is brown and distinct at costa, forming a strong tooth opposite cell, below this it is rounded over median nervules and fainter. Sub-terminal line straight, distinct, even, brown, and well marked. Reniform concolorous, constricted, with pale edging. T. a. line even, slightly arched. A terminal dentate line; fringes brownish. Hind wings, sub-pellucid, iridescent whitish, with soiled veins, with vague brownish borders, beneath with dark dots on primaries, which become a clouded spot. Body brownish gray. This species has the form of Mr. Morrison's *Taniocampa vegeta*, but is of an ochrey fuscous gray, not at all reddish, or brown with a red tinge. Arizona. Coll. B. Neumoegen, Esq. Expanse 33 mil. Tibiæ apparently unarmed.

LITOGNATHA LINEARIS, n. s.

♀. A small species, powdery fuscous, with the fore wings shaded with gray. Inner line single, a little curved; outer median line distinct, dark brown, a little flexed, even, followed by a pale edging. S. t. line a faint pale shade. Outer portion of the wing darker shaded. Hind wings concolorous dark fuscous. Beneath paler with a faint dark common median shade. Head and collar somewhat ochrey. Arizona. Coll. B. Neumoegen, Esq. Expanse 18 mil.

I refer this species here doubtfully. It has something the look of a *Thalpochares*, but the neuration seems to differ decidedly.

SPARGALOMA PUNCTIPENNIS, n. s.

♀. I have only one specimen, which may not belong here. The wings are somewhat narrower than usual, the apices very pointed. The long terminal joint of the palpi is somewhat flattened. The color is a saturated ochre, somewhat pale. The fore wings are crossed by two thread-like, dark median lines, the outer produced opposite cell, the inner with a prominent indentation at middle, on cell. Median shade indicated. Reniform large, concolorous, outlined. A minute black dot before internal angle on the subterminal line. Hind wings darker, with a mesial line and following blackish subterminal shade. Beneath ochrey. Head and collar darker. Arizona, Coll. B. Neumoegen, Esq. Expanse 24 mil. The colors are those of *Zanclognatha*, but the structure, so far as I can judge of the single female I have before me, is more like *Spargaloma* than any genus known to me.

In this paper I have described a number of *Noctuidæ* which have been of great scientific interest. They have added to the number of strong genera, defined by natural characters, such as *Fota* and *Rhodosea*, and in addition we have forms which are remarkable from the fresh combination of characters which are found in other genera, such as *Carneades* and *Trichorthosia*. Undoubtedly this gradual work towards a comprehension of our Noctuid fauna has the disadvantage of being fragmentary, but it is inseparable from the conditions under which the new material is received. It is, I hope, all put into such shape that it can be used by the future monographer of the Family, which latter is probably the most extensive among the larger moths.

HADENELLA, Gr.

This genus is founded on a small species which at first sight looks like a small *Oncocnemis*; but there is a minute basal tuft on the abdomen, the thorax is thickly scaled behind, the vestiture is distinctly scaly. The lashless eyes are naked. The front is remarkable for a prolonged tubercle having a subcordate terminal face slightly impressed. Antennæ simple, ciliate. The fore wings are entire, sub-triangular, with well produced apices. The labial palpi are short, with small terminal article, just exceeding the infra-clypeal plate. The type, *H. Pergentilis* Gr., has gray wings shaded with light-ochrey or fawn. The orbicular oblique, pale-ringed with blackish centre; below it the longer claviform is similarly indicated. The reniform is transverse, black. There is a black, pre-

apical, inwardly oblique shade, edged with pale. The fawn color spreads over apical region and obtains at base and over middle of wing. The interlined fringes are dotted black and white. The lines are obsolete; costal marks distinct; veins dotted. A subterminal brownish shade followed by blackish, especially at anal angle. Hind wings pale fuscous. Washington Territory (coll. by Mr. Morrison).

YPSIA UNDULARIS.

I have been unable to find any spinules on the tibiae of this species.

YPSIA UMBRINA.

In this species (*Pheocyma umbrina*) the tibiae are also unarmed.

HOMOPTERA UNILINEATA.

In this species the middle and hind tibiae are spinose.

MATIGRAMMA RUBROSUFFUSA.

In this species the middle tibiae alone are spinose, and strongly so.

HOMOPYRALIS MISERULATA.

In this species the slender tibiae are unarmed.

PETROPHORA EXCURVATA, n. s.

This species may be known by the markings being more distinct beneath, where the wings are crossed at the middle by a deep brown band filling in the outer median space between the median shade and the outer median line, the latter darker, pointed opposite the cell on fore wings and roundedly exerted in the same place on secondaries. A subterminal series of scalloped brown shades edged with pale outwardly. Fringes checkered. Fore wings with pointed apices; hind wings produced medially; the fringe has a dark even line at base. Above, these markings are more faintly reproduced; the s. t. line pale; the outer median line notched below costa, followed by a pale line. Beneath there are small lineal discal marks on both wings. One specimen. Colorado, Coll. B. Neumoegen, Esq. Expanse 27 mil.

PETROPHORA MIRABILATA, n. s.

Allied to *Hersiliata*. Thorax and base of fore wings carneous gray; abdomen whitish. A sub-basal bright fleshy-brown band angulated on its outer edge on submedian fold. Median space blackish gray, straightly limited outwardly, narrowed on submedian fold by the tooth of the inner line, widest at costa, crossed by indistinct dark lines, followed by a broad clear fleshy-brown band edged with white outside of the outer median

line, extending to apices on costa, leaving the terminal space narrowly blackish gray, cut superiorly by the faint, white subterminal line; fringes checkered. Hind wings ochrey whitish, with a faint dot and transverse lines. Beneath, four discal dots; the wings are whitish gray, irrorate to the subterminal pale, fleshy-brown band; lines on hind wings more distinct; markings of primaries reflected from above. Arizona. Coll. B. Neumoegen. Exp. 25 mil. The nearly perpendicular outer median line of primaries, edged with white, and the bright submedian and subterminal fields, distinguish it.

CYMATOPHORA (BOARMIA) GRISEARIA, n. s.

♀. This species may be known by its large size, its clear black and white, pepper and salt color, in which the white largely predominates; its resemblance to *Amphidasys*. White irrorate with black. Lines very distinct, black; the outer continuous, scalloped and produced on the veins; continued equally distinctly across the concolorous hind wings. Median and sub-basal lines near together, originating from costal spots. Subterminal line obsolete; a black cloud on terminal field opposite cell; a slighter one before anal angle. On hind wings there are also some vague black terminal cloudings. A faint festooned terminal line marked by black points. Beneath vague, pale, discolorous; discal marks faintly marked. Body like wings. This cannot be the female of *Pulmonaria*. Body like wings. Arizona. Exp. 36 mil. Coll. Neumoegen.

CYMATOPHORA (BOARMIA) SEPARATARIA, n. s.

♂. Allied to *Humaria*; the color is of an even mixed dove gray, the lines are accented and unequally distinct. Inner line roundedly oblique, marked on vein 1 and thence to margin; median shade line indistinct, near outer line, which is placed as in *Humaria*, uneven, produced on the veins. Discal mark indistinct. The black inner line is preceded by a faint shade line, and the outer line is followed by an indistinct shade line. Subterminal line whitish, toothed, upright, equally legible, followed by a black indistinct dentate line. The concolorous secondaries have the markings continuous, the median line distinct, discal mark indistinct. Beneath discolorous, very pale smoky, utterly immaculate. This species is intermediate between *Humaria* and *Crepuscularia*. Expanse 35 mil. Arizona.

CYMATOPHORA (BOARMIA) OBLIQUARIA, n. s.

♂. Allied to *5-linearia*. Pale whitish gray. Inner median line

black, roundedly oblique, continued as a black spot on extreme base of secondaries. Outer median line very oblique, running close to inner line below median vein, followed by a faint brownish shade. Subterminal field wide. S. t. line white, deeply scalloped, crossed by an oblique apical blackish shade; terminal border darker gray on both wings; a distinct scalloped black terminal line; hind wings toothed, copying primaries; faint discal ringlets on both wings; the median lines black on hind wings, the inner less complete. Beneath pale, the lines feebly reflected; four discal points. Female entirely dark gray, obscuring the lines, which can be made out to run as in the male, but are here finer, the white subterminal waved line evident on both wings. Beneath of a freckled dark gray; the four discal dots plain. Expanse, male, 24-26 mil.; female, 31 mil. Arizona.

CYMATOPHORA (BOARMIA) RUFARIA, n. s.

♀. This species is allied to *Separataria* ♀ in form and markings, but the hind wings are more cut off and straighter along external margin. The color is a pale reddish brown and is unusual. The subterminal line is whitish and distinct. Beneath, of a freckled brown with the four discal points marked. Above, the brown lines have the same course as in its ally; the outer median line somewhat sinuous, oblique. Expanse 34 mil. Arizona. Coll. Neumoege.

TETRACIS GROTEARIA Pack.

Three males and two females from Arizona vary much in color and distinctness of markings. This is smaller than *Vidularia*, which has the disc of thorax discolorous, but otherwise is very near to Packard's species.

ENDROPIA SESQUILINEARIA, n. s.

♂. Very large and with the look of a *Caberodes*. Fore wings pointed, very shallowly excavate and roundedly projected at middle of exterior margin. Pale fawn ochrey, with two ochre brown lines on fore wings, and one (the outer) continuous over secondaries. Surface sparsely speckled. Four black discal points above and below. At place of subterminal line two pale flecks between veins 5 and 7, more distinct beneath, where they are edged inwardly by a line. Secondaries rounded. Allied to *Vinulentaria*. Expanse 42 mil. Arizona. Easily recognized and quite distinct from any other species.

APLODES ARIZONARIA, n. s.

Allied to *Packardaria* (*Rubrofrontaria* Pack., 386) as I understand the

remarks as to venation. Wings green, curiously mottled with pale, somewhat strigose. Inner line on fore wings obsolete. Outer line white, straight, bent on secondaries, which have no inner line. Costa of fore wings red, more distinctly so beneath. Fringes all pale. Vertex white, collar red at base; tegulae green; palpi red tipped; legs white, fore legs shaded with red. Exp. 30 mil. Arizona. Type Coll. Neumoegen.

This seems allied to the Californian *Anaploides Pistacearia* of Packard, but the costa is wholly reddish above and below, beneath the wings are iridescent, pale greenish, without discal marks and only showing reflected the outer line. Above there are no discal marks. The two are evidently related; the legs are defective in my type, otherwise fresh.

CHLOROSEA ALBARIA.

♀. Head white on vertex; whitish on front, mixed with a few green scales. Palpi white, with a few dark scales at tips, rather short. Thorax greenish. Fore wings delicate green with two straight, parallel white median bands, rather near together, fringe white; the costal edge does not seem discoloured, it is somewhat whitish above. Beneath, the bands are reflected. Hind wings white, thinly scaled, translucent, without marks above and below, except a faint white discal mark. This moth should be known by its white secondaries, the pale green, somewhat mottled primaries, the median bands being straighter, and equidistant as compared with *Bistriaria*. One specimen (abdomen wanting). Arizona. Expanse 23 mil.

The hind wings are slightly greenish and iridescent, and very frail, but contrast by their white color with primaries. They do not look faded.

LITHOSTEGE ARIZONATA, n. s.

♀. Smaller than the described species. Fore wings fuscous, shaded over with white. Median vein white; the inner oblique dark line appears below it. The outer line is marked by black spots on the veins. Subterminal line white, straight, a little rounded, the apical veins marked with white before it. Fringes distinctly white and gray, checkered. Hind wings elongate, rather pale fuscous, immaculate. Expanse 20 mil. Arizona. There are but two dark lines on the wing; the inner very oblique and only marked inferiorly in the type.

TETRACIS OBLENTARIA, n. s.

♂. Two specimens with simple antennae and the hind margin of secondaries pointed in the middle, I would refer to Packard's *Parallel-*

aria, but the secondaries are lined above, the discal dots obsolete beneath and the lines are further apart; the general shape of the outer line and position is as given in his figure 43. Color of *Caberodes Metrocamparia*, a fawn ochre, varying in pallor. Two brown diffuse lines, edged with pale on fore wings; the inner upright, but more or less uneven, in one example toothed on costa. Surface slightly irrorate; a dark discal dot. Secondaries paler, with an incomplete mesial line, beneath more continuous and bent. A single outer common line beneath; in one specimen the discal points on primaries indicated. The inner line on primaries is obsolete beneath. Exp. 30 to 32 mil. Arizona. Two examples. Coll. Neumoegen.

TETRACIS SIMPLICIARIA Gr.

Two examples from Montana are smaller and paler than my Arizona type. In this species the wings are deep ochrey, the hind wings pale and unlined. The lines are pale on primaries, but one Montana male has them dark.

THERINA FERVIDARIA Hubn.

Two specimens from Arizona do not differ from the normal form.

SEMIOTHISA S-SIGNATA Pack.

In every variety. Sometimes the inner line is as distinct and broad as the outer. Sometimes the wing is ochrey, free from irrorations, again so blotched as to be nearly fuscous or blackish. I can find no grounds for naming the varieties, much less for finding different species. Arizona.

LUSSA, n. g.

A Hadenoid genus allied to *PERIGEIA*, but of a singularly elongate form, recalling *Chilo*. Abdomen slender, twice as long as secondaries. Vestiture hair-like, mixed with rounded broader scales. Labial palpi curved up over the flattened front, the long hairs from the terminal joint reaching to base of antennæ. Eyes naked; ocelli present, but small. Legs unarmed. A tropical looking insect, at first sight seeming to be a Pyralid.

LUSSA NIGROGUTTATA, n. s.

♂. Antennæ simple. The insect has the look of a Pyralid, but the maxillary palpi are not present, and as far as I can see, the neurulation is Noctuidous. Body long, linear, slender, squamation appressed; color a faded grayish clay, fore wings narrow at base, no marks but a few black dots, of which the subterminal series is continuous with a larger one at

internal angle. Costal black points mark the inception of the lines, which are partially expressed, fine and dentate or uneven. Hind wings iridescent with smoky borders. Collar edged with black. Expanse 26 mil. Indian River.

LYGRANTHOECIA TENUESCENS, n. s.

♂. I should refer this species to *Euleucyptera* had I described it before Mr. Smith's valuable paper appeared. The fore tibiae are abbreviate, on the inside with a long terminal claw, followed or preceded by two thin spinules; on the inside there is a much shorter claw opposite the long one at the extremity of the joint on the outside, followed by a still shorter claw. The primaries are like *Cumatilis*, but the white band is very narrow, shaped like *Hulstia*; here the colors are pale olive and silvery white. Base olive, then the white median band, broadest on costa; the outer portion pale olive cut by the rather broad white subterminal shade. Tibiae spinose; clypeus bulging. Differs structurally from *Antaplaga Dimidiata*. Exp. 22 mil. Arizona.

PYRRHIA ILLITERATA Gr.

This is described by myself before Mr. Morrison or Prof. French named it. Unfortunately I have not my type; if I recollect rightly, Mr. Thaxter has the species. It may be known at once by its brilliant orange red color, both wings alike, the markings of primaries black. It seemed to me to be Guenee's *aurantiago*, though the figure in the Species General hardly resembles it except in color (pl. 7, fig. 1). My *Heliothis Lupatus* is founded on a specimen given me by Meske from Bastrop Co., Texas. The types of both are now in B. Mus. *Lupatus* is very different in color (even from faded *Illiterata*) and apparently in markings, reminding one of *Heliothis dipsaceus*. The color is a saturated ochre, somewhat intense, and the insect was concolorous. To the best of my recollection, I determined this species in Mr. Neumoen's collection correctly. I have no recollection of naming it for Prof. Riley; if so, I did it in Washington, away from my collection. I regret I have no notes on tibial structure of either of these species; I recollect examining the tibiae of *Lupatus* and finding them armed, hence my reference. Of the tibiae of *Illiterata*, I have no recollection. It was described many years ago, but I should quickly identify the species, which I had no doubt was Prof. French's (as I compared them). Mr. Smith's remarks reveal an unexpected similarity between these insects, which can readily be cleared up the moment I get a specimen of *Illiterata* again in my hands.

TRICHOLITA INCONSPICUA, n. s.

♂. Antennae bi-pectinate; front smooth; eyes hairy; tibiae unarmed. Fore wings fuscous with obliterate markings. Reniform white, moderate, orbicular a small white fleck. Fringes cut with pale. Hind wings whitish with vague border; minute discal dot visible beneath. This species is smaller than the other two, the reniform obtuse, with a central line, not L-shaped. Beneath the fore wings are pale, the discal dot set in a pale ring and unusual in appearance. Expanse 25 mil. Arizona. Coll. Neumoegen.

METALEPSIS Gr.

Male antennae bipectinate. Collar discolorous, slightly hollowed out. Eyes naked, lashed. Labial palpi not exceeding front, with small and conical third article. Tibiae armed. Abdomen untufted. Vestiture hairy. Wings entire. Body rather hairy. The type is:

1. *Cornuta* Gr. California.

This genus differs in the structure of thorax from *Pachnobia*, the type of which is *Carnea* from Europe, Labrador and White Mts.

PHEOCYMA TERMINA, n. s.

♀. Allied to *Edusina*. Basal field of primaries dark brown, darker than the wings, which are obscure brown. The t. p. line indented opposite the cell, following the shape of the inconspicuous reniform. A paler shade outside of the basal field; all the lines and shades inconspicuous. An oblique apical shade. The external margins in both wings denticulate, as are the fringes. Hind wings a little more yellowish brown with indistinct, transverse, somewhat undulate lines, the middle one distinct, dark brown. Beneath obscurely colored, white costal dots; extra-mesial line tolerably distinct, crossing both wings; secondaries crossed by several indistinct lines; a terminal series of illegible white points. Two or three specimens. Arizona. Expanse 30 mil. Types of *Edusina* are in Cambridge. I use this genus instead of *Homoptera*.

SEMIOTHISA PATRICIATA, n. s.

♂. Antennae with very short teeth. Allied to *Multilineata*, but differing by the median line being single. Primaries falcate, crossed by three sub-parallel, deep brown lines; the inner with a costal tooth, the median arising from a costal spot, the outer almost imperceptibly bent at costa, all even, hardly oblique; the outer followed by a faint line margining inwardly the pale brown subterminal band, which reaches across both

wings and widens on secondaries. The outer line crosses a spot on median vein. The subterminal line is broader, paler brown, and is broadly marked on costa. Secondaries like primaries in color and distinct markings, dentate, tailed; a discal spot between the two vividly marked median lines. The color is a dove gray, except the brown subterminal band. Beneath diffusely shaded with blackish and yellowish, more coarsely irrorate, markings repeated. Head and antennæ yellowish. Very distinctly marked and peculiar. Expanse 26 mil. North Carolina. Coll. Neumoegen.

PROSOPARIA PERFUSCARIA, n. g. et s.

♂. Antennæ bipectinate. Above wholly dark fuscous, the primaries with two dark, tolerably propinquitous median lines, the outer continued over hind wings. Beneath paler, somewhat ochrey, with a common exterior dark shaded band. The insect has the appearance of *Fidonia*; the under surface differs by its uniform appearance. Expanse 18 mil. Arizona. Coll. Neumoegen.

This genus differs from *Fidonia* by the unusually long labial palpi, which are projected nearly straightly forwards, and extend for half their length beyond the clypeus. Front scaled with a median ridge, formed by the flattened scales meeting from both sides. Hind tibiae with two pair of spurs. Legs slender, closely scaled. The insect has the appearance of *Fidonia* (*Perconia*).

FIDONIA PARTITARIA, n. s.

♂ ♀. Allied to *Fimetaria*, but distinguished by the females being of a light ochrey. The male is fuscous, allowing two common lines to be faintly made out; the costa near apex shows two pale abbreviate bands, and a subterminal series of spots is inaugurated to be discontinued. Fringes checkered. The female is pale ochrey above, allowing two dusky lines to be seen, and with the costa still paler; a subterminal series of pale spots. Beneath the hind wings show three bands of nearly coalesced white spots, the basal band often broken; the base shows a white spot, the ground color, an olive ochrey, appears narrowly between the bands. In the male the ovate spots are reduced, silverywhite, separate. Fore wings with the disk fuscous, darker in male, the costal region ochrey, allowing the lines to be seen. Arizona. Several specimens coll. Neumoegen. Expanse, ♂ 16, ♀ 18 mil.

TELESILLA NAVIA Harvey.

No doubt exists in my mind that this is very different from *Cinereola* by its pallid, ochrey color, its darker median field narrowing inferiorly, bulging out opposite cell and better defined on both sides from the rest of the wing. The shape of the t. p. line is thus different from *Cinereola*, running in more below median vein. Mr. Morrison's species of *Telesilla* is Gueneé's *Galgula*, and does not belong here at all.

SCOLECOCAMPINÆ.

Under this sub-family name I arrange *Doryodes*, *Eucalyptera*, *Scolecocalpa*, *Phiprosopus*, *Cilla* and *Amolita*.

In my opinion, the genera of our N. Am. Noctuidæ are well enough defined in my writings, and in part in Gueneé's, to arrange our species. What is needed is a nearer study of our fauna with the European. A merely arbitrary change in the location of the genera gives a color to a wide divergence in appreciation of character, which can no longer exist, since all the natural characters have been exposed by me. I have gradually changed the basis in literature of Gueneé's genera and worked out their association in groups, which shed a light over the mass of forms in discussing them, but are sub-families without strong exclusive characters. Wider or more pointed wings, longer legs, or an exaggeration of character mark, for instance, *Scolecocalpa* as compared with *Doryodes*, but the linear body, oblique palpi, (often smoky at the sides in this group) the dots on reniform, the pointed apices and slender feet, mark the group as a whole. In *Senta* the body is flat, the wings are Crambiform. It is a different type, and I leave it with *Nonagria* for the present. The body is nowhere so long and linear (*Chiloform*) as in *Doryodes* and allies.

I refer the student to my paper on *Cilla distema* (Am. Ent. 1, 100), where I show the affinity of *Scolecocalpa*, *Eucalyptera*, *Cilla*, *Amolita* and *Doryodes*, all of which were known to me in nature. For this group, which I remove out of the *Nonagriinæ* M., I propose the term *Scolecocalpinæ*. The structural differences between *Liburna* and *Bipuncta* are very slight, although there is so much difference in size; *Obscura* seems intermediate in this respect. I do not know, as I have elsewhere said, *Thamatopsis longipalpus*. It cannot, I think, be *Cilla distema*, which is a pallid bipunctate form, without the median longitudinal shade which is characteristic of *Doryodes*, is marked in *Amolita*, and faint in *Euca-*

lyptera. The dotted discal stigmata (ringed also in *Liburna*) and smoky pallid colors, are characteristic.

The species have rostrate palpi, stretching forwards or but slightly inclined; variable in length, reminding one of *Crambus*, and as the insects are internal feeders in the larva state, as far as we know, the group is best placed between the Gortynas and Nonagrians. They seem to me a distinct sub-family group, the body being slender, even in *Scolecocampa liburna*, and long compared with wings, which are narrowest and most pointed in *Doryodes*. The legs are slender and long, comparatively, and unarmed. The structural features remind us of *Chilo* and the lower *Crambidae*. The sub-family *Scolecocampinae* is one of the most curious in the *Noctuidae*, and hardly yields to the *Nonagriinae* in general interest.

The species of this sub-family may be arranged as follows:

SCOLECOCAMPINÆ M.

SCOLECOCAMPA Guen.

1. *Liburna* Geyer.
 Ligni Guen.

EUCALYPTERA Morr.

2. *Obscura* Gr.
3. *Bipuncta* Morr.

DORYODES Guen.

4. *Acutaria* H. S.
 ? *Bistriaris* Geyer.
5. *Spadaria* Guen.

AMOLITA Gr.

6. *Fessa* Gr.

CILLA Gr.

7. *Distema* Gr.

ADIPSOPHANES TERMINELLUS, n. s.

In this genus the collar is roundedly bulged in front, and there is a small tuft behind it. The wings are finely lined, *Cucullia*-like, and the slender gray species have white sub-pellucid secondaries, which in *Miscellus* have diffuse smoky borders, but in *Terminellus* have the apical edge marked with blackish fuscous while the wing itself is pure translucent white; while in the type species it is slightly smoky. The new form, from Texas, is a little more robust than *Miscellus*; it differs by the terminal space on fore wings being shaded with blackish, the lines on interspaces

distinct, black ; the median lines marked in black on costa ; the outer line continued outwardly some distance and then broken into dots ; the inner line apparent again at internal margin. The smoky median shade apparent near the t. p. line. Otherwise *Terminellus* much resembles the less distinct *Miscellus*, from which a quick distinguishing mark is further a black band across the pallid front. Palpi gray at tip and beneath. Under surface white and very distinct by the dark contrasting terminal field, the outer median line again appearing and vividly black on costa. Fringe checkered. Hind wings beautifully iridescent, no discal marks. In my collection.

CLEORA VENATA, n. s.

Male and female. This differs by the male antennæ being simple, not plumose ; from *Nigrovenaria* by the outer black median line arising near the apex, accentuated on the veins. The veins are more or less black. Coarsely speckled with brownish black and very pale ground. Inner median line with a long, large tooth on cell reaching to discal mark. A dotted mesial line on the paler irrorate secondaries, which show a faint discal dot. One male variety has the median space suffused with blackish brown. Body pale. Size large. Outer median line less oblique than in *C. Umbrosaria* ; it is indented opposite cell and runs again inwardly below vein 3. Beneath paler with reflected coarse speckling and outer dotted line. Fringe checkered. Expanse 40 mil. Three examples from Montana in Mr. Neumoegen's, one in Mr. Hill's collection.

SEMIOTHISA DENTICULATA, n. s.

♀. The outer margins are dentate, not "tailed" on secondaries, with a distinct brown line and tinge. Wings of a clear white above, the primaries crossed by four faint brown lines marked on costa, the subterminal faint. Opposite the cell the outer line and the subterminal beyond it are slightly accented with blackish. The outer median line is accented and the strongest marked. The hind wings somewhat speckled. This species may be known by its china-white tint of both wings above, the surface being very slightly powdered with gray, and the brown terminal line and dentate margins of the wings. The body is grayish-white and beneath the bands and costal edges are ochrey ; a fuscous shade, cut by the ochrey veins, following the third or outer median line. The legs are ochrey or yellowish. California. Exp. 25 mil.

REPORT OF THE ENTOMOLOGICAL SOCIETY OF ONTARIO
TO THE ROYAL SOCIETY OF CANADA, MAY, 1883.

The Royal Society of Canada having invited the Entomological Society of Ontario to send a delegate to their recent meeting in Ottawa, the Council recognizing the importance of the work undertaken by the Royal Society and anxious to do all in their power to further the advancement of Science, especially in the department of Natural History, appointed Mr. James Fletcher, of Ottawa, to represent the Entomological Society on that occasion. Mr. Fletcher was present, took part in the proceedings and submitted the following report :

To the President and Members of the Royal Society of Canada :

GENTLEMEN,—In response to the invitation received by the Entomological Society of Ontario to send a delegate to the meetings of the Royal Society of Canada, the Council of Management gladly avail themselves of the privilege so accorded them of being represented on this occasion.

As their delegate I shall endeavor to submit for your information, in as brief a manner as possible, some of the main features relating to the origin and progress of the Society, now so well known as the Entomological Society of Ontario. It was organized in 1863 under the name of the Entomological Society of Canada, by a few naturalists living in different parts of the Provinces, who met together at Toronto for this special purpose. Its membership, at first, was only 16, and this number included all those then known to be interested in the study of insect life in Canada. From this small beginning the Society has steadily increased until its membership now reaches upwards of 500.

The benefits of organization and united effort were soon manifested by the rapid accumulation of valuable facts relating to scientific and economic entomology. Formerly this material was, from time to time, published in the pages of the Canadian Journal ; but the increased interest in the work of the Society, and its larger membership, rendered it necessary in a few years to establish a periodical of its own, entirely in the interests of Entomology. On August 1st, 1868, appeared the first number of the CANADIAN ENTOMOLOGIST, a monthly periodical which has from that time forward been regularly issued, and which was for some years the only publication on the continent of America devoted solely to this important branch of natural science. It has now reached its fifteenth volume. From the outset its pages have been almost entirely filled with the records of original

work ; and during its existence it has been the means of disseminating a vast amount of scientific knowledge, which has been of benefit not only to Canada, but to the world at large. In this connection it may not be out of place to quote the opinion of one of the leading American entomologists. Prof. Grote, of New York, in his late work on the Noctuidæ, when enumerating the sources of information of value to entomological students, speaks of the organ of our Society in the following complimentary terms :

" The treatise of Dr. Harris, which has become classical on its subject, did much towards creating a general interest in entomology. But the publication of the CANADIAN ENTOMOLOGIST, a journal aided pecuniarily by the Ontario Government, and owing its success chiefly to the unselfish labors of Mr. William Saunders, has assisted the progress of entomology in America probably more than any one other similar undertaking."

The work of our Society has also been favorably commented upon abroad, and a regular system of exchange of publications has been established with many of the important learned Societies of Europe. In addition to the good work done by the issue of the CANADIAN ENTOMOLOGIST, collectors have been materially aided in their studies by the classified lists of the different orders of Canadian insects which have been published as the material for the purpose was gathered together. The extensive collection exhibited by the Society at the Centennial Exhibition at Philadelphia, attracted much notice, and was admitted by all who saw it to be most creditable to Canada. At the request of the Dominion Government a similar collection has been sent to England as part of Canada's contribution to the International Fisheries Exhibition.

Beyond this purely scientific work, the Society has, in a series of 13 Annual Reports on Insects Injurious and Beneficial to Agriculture, given to the farming community a large amount of useful information.

The Government of Ontario recognising the good work thus accomplished, incorporated the Society as the Entomological Society of Ontario under the "Agriculture and Arts Act" in 1870 ; and at the same time gave material aid by allowing a liberal annual grant from the public funds.

In view of the necessity for the constant interchange of specimens between students in every department of natural history, in order that, by comparison of other forms, their studies may be thorough, the Entomological Society of Ontario respectfully suggest that the Royal Society of

Canada should use its influence to secure a more liberal interpretation of the postal regulations, with reference to the exchange of specimens between students in Canada and those in the United States and Europe, particularly in the closely allied sciences of Entomology and Botany.

And it would also further suggest that a representation be made to the Government to the end that arrangements be made whereby scientific bodies may be permitted to import, free of duty, any engravings, woodcuts, lithographs, electrotypes, or other illustrations which they may require for their publications.

The members of the Entomological Society of Ontario have learned with much pleasure that the Royal Society has already taken some steps towards the establishment of a National Museum, and believing that such an institution would very appreciably assist the whole cause of science in Canada, they take this opportunity of assuring the Royal Society that they will be pleased to help in every way in their power towards this end by collecting specimens or otherwise.

Signed on behalf of the Council,

Ottawa, May 22, 1883.

J. FLETCHER, Delegate.

DESCRIPTION OF A NEW SPECIES OF THECLA FROM FLORIDA.

BY W. H. EDWARDS, COALBURGH, W. VA.

THECLA WITTFELDII.

MALE—Expands 1.5 inch.

Upper side black-brown; primaries have a large oval stigma; secondaries have the edge of hind margin on posterior half pale metallic blue; a large fulvous spot in second median interspace over a black spot on the margin; two tails, the posterior one very long, measuring .24 inch on anterior side, the other .1 inch; black, tipped with white; fringes of primaries fuscous, of secondaries same to upper median nervule, then white, and next anal angle, long, brown, with a whitish line running through them.

Under side dark brown, the hind margins narrowly edged by white; the costal edge of primaries next base red; both wings crossed by two macular white lines, the outer one sub-marginal, nearly parallel to the margins, and quite regular, broken at the nervules, crenated on posterior

half of secondaries and ending in an oblique streak up the inner margin ; each spot edged black on outer side, and on primaries, in the median interspaces, there is more or less fulvous outside the black ; on secondaries is a large spot on the margin behind lower median nervule, made by blue-white scales on the brown ground ; and in the next interspaces are three deep red fulvous spots, diminishing gradually in size, the outer one sometimes obsolete, the largest with a black patch on its marginal side ; anal angle black, overlaid on inner margin by white and a red streak ; the inner of the two lines is extra-discal, somewhat irregular, especially on secondaries, and joins the other at the lower median nervule of secondaries, then makes an angle in sub-median interspace, and ends in a streak up inner margin ; in cell of each wing two parallel abbreviated white streaks or bars.

Female—Expands 1.7 inch.

Upper side as in the male, except the stigma ; the tails measure .26 and .12 inch respectively ; under side as in the male.

From 3 ♂ 1 ♀ taken by Dr. Wm. Wittfeld, at Indian River, Florida, 1883. This observer, in the past three years, has done more to elucidate the biological history of the Lepidoptera of Florida, than any one who has preceded him in that section, and he has discovered a remarkable number of new species of butterflies especially, and has introduced to the N. Am. fauna many other species both of butterflies and sphinges, which though previously described, had not been seen in the U. States. I take pleasure in naming this fine *Thecla* for Dr. Wittfeld.

The examples were sent me labelled *Favonius*, a species quite distinct from the present, which in several respects is near to *Calanus*. It differs from *Calanus* by the greater size, the very long tails, and in the inner of the two transverse lines beneath, which is single, whereas in *Calanus* this line is double, or chain-shaped ; the parallel bars in the cells are like those of *Calanus* ; also like *Crysalus*, and such bars are found in no other of the American species.

IMPORTANT TO ENTOMOLOGISTS.

In accordance with a resolution passed at a meeting of the Entomologists in attendance at the Montreal Meeting of the American Association for the Advancement of Science, in August, 1882, authorizing me to call and "to provide for similar meetings for Entomological discussions at the

future annual gatherings of the Association," I herewith name Wednesday August 15th, 3 o'clock p. m., as the time for the first of the series of the Minneapolis (Minn.) meetings, the place of meeting to be named hereafter.

All interested in Entomology are respectfully invited to attend the meetings, and participate in the discussions.

Albany, June 1, 1883.

J. A. LINTNER.

RECORD OF ACTUAL DATES OF ISSUE OF CANADIAN ENTOMOLOGIST.

NOTE.—It is intended hereafter to give in each number of the CAN. ENT. the date of actual issue of the previous number.

We give the dates from Jan. 1, 1882.

Vol. XIV., No. 1,	January	— issued	February 2,	1882.
" "	2,	February	" "	28, "
" "	3,	March	" "	March 31, "
" "	4,	April	" "	May 18, "
" "	5,	May	" "	June 14, "
" "	6,	June	" "	July 26, "
" "	7,	July	" "	August 21, "
" "	8,	August	" "	October 18, "
" "	9,	September	" "	November 18, "
" "	10,	October	" "	December 14, "
" "	11,	November	" "	January 5, 1883.
" "	12,	December	" "	January 29, "
Vol. XV.	1,	January	" "	February 21, "
" "	2,	February	" "	March 18, "
" "	3,	March	" "	April 7, "
" "	4,	April	" "	May 18, "
" "	5,	May	" "	May 26, "
" "	6,	June	" "	June 26, "

CORRESPONDENCE.

ZELLER'S COLLECTIONS, ERRATA, ETC.

Editor Can. Ent.: In a recent letter from Lord Walsingham I am informed that he has "just bought all the collections of the late Prof. Zeller." This will be good news for American Micro-lepidopterists, as

Prof. Zeller has described a great number of American species, and the types, in Lord Walsingham's possession, will be far more available for assistance in the determination of our indigenous species than they would be if placed in some continental museum. His Lordship has kindly given so much aid to those of us who are interested in his specialty, in this country, that we have sufficient reason to rejoice over the increased facilities for the study of our Micros which he will have in the possession of this far-famed collection.

Referring to his recent "Notes on American Tineidæ," Lord Walsingham wishes me to "point out with his concurrence and apologise for the error" that his genus *Idiostoma*—first characterized under the name *Idioglossa* in the Proc. Ent. Soc. of London, 1881, p. 273—is but a synonym of Frey and Boll's *Metamorpha*, Stet. Ent. Zeit., 1878, p. 277—the species described in the "Notes" as *americella* Wlsm., being the same as *M. miraculosa* Frey and Boll.

In this connection it may be well for me to change the names of two species of *Gelechia* described by me in the December number of the CAN. ENT. for 1881, the names there published being, as I am informed by Lord Walsingham, pre-occupied by European species in the same genus. The name *formosella* for the species rolling leaves of laurel oak, is hereby changed to *vernella*, in reference to its occurrence in spring-time only, so far as I have been able to observe. *G. cinerella*, the species mining and crumpling the edges of the leaves of *Solanum Carolinense*, may hereafter be known as *G. inconspicuella*.

The pretty little *Lithocolletis* described in the same paper under the name of *L. gregariella*, is, in Lord Walsingham's opinion, identical with Clemens' *L. desmodiella* (see "Notes," p. 202). Mr. Chambers, on the contrary, wrote me this spring that he was quite convinced that it was distinct from Clemens' species. Since specimens bred from the same plant and even from the same mine, vary in shade and in intensity of the ornamentation, it is not surprising that some quite marked differences should exist between examples mining *Desmodium* and those mining *Phaseolus*, and yet these differences may not be of specific value. Never having seen an undoubted specimen of *desmodiella*, I am not competent to express an opinion on this subject, and am quite willing to accept the determination of Lord Walsingham.

MARY E. MURTFELDT.

Kirkwood, Mo., June 12, 1883.

INSECTS AFFECTING DRUGS.

Editor Can. Ent.—Dear Sir: To the list of drug insects observed in this country, as given by Mr. Wm. Edwin Saunders in the May number of the CANADIAN ENTOMOLOGIST, I have two additions to make. One is the Tobacco-beetle, *Lasioderma serricorne* Fabr., a well known pest in many cigar factories in the U. S. I found this in a drug store at Detroit, Mich., where the larvæ had completely honeycombed a lot of rhubarb. The same habit of the species has been recorded by European writers. The second addition is *Cryphalus jalappæ* Letzner, a small, inconspicuous Scolytid beetle, probably originating from Mexico, which has been carried by commerce all over the world. It was first found by Mr. H. G. Hubbard and myself in 1874, in the Medical Laboratory of the U. S. Navy Yard at Brooklyn, N. Y., and later observed by myself in drug stores at Detroit, Mich. and Washington, D. C. It occurs only in *Radix jalappæ*. The species has to my knowledge never before been recorded from North America, but will no doubt be found wherever the drug mentioned above is kept.

Yours truly,

Washington, D. C., June 8, 1883.

E. A. SCHWARZ.

DAMAGE CAUSED BY ANTS.

Early in the month of June I discovered that certain portions of the flooring and supports of my verandah were giving way, and I accordingly sent for a carpenter to do the necessary repairs. On taking up the flooring I found two nests of large black ants, and examination showed that nearly the whole damage was caused by these insects. Large joists were very much excavated, and in some cases eaten completely through; two pillars or posts eight inches square were eaten out to a distance of some two feet from the floor, and unless prompt measures had been taken the corner of the verandah would in all probability have given way. I had noticed these ants for a couple of years back, but never dreamt that they were so numerous or were doing so much injury. I sent specimens to my friend, Dr. Hagen, and asked his opinion as to remedy. He writes me that the ant is *Formica ligniperda* Latr. (*Camponotus ligniperdus* Mayr). He recommends an application of boiling water in which soft soap has been largely dissolved.

E. B. REED.

